

SEQUENCE LISTING

<110> KANEKA CORPORATION

<120> NOVEL ACETOACETYL-CoA REDUCTASE AND PROCESS FOR PRODUCING OPTICALLY ACTIVE ALCOHOL

<130> B030435W001

<150> JP2003-380987

<151> 2003-11-11

<160> 15

<170> PatentIn version 3.1

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<212> PRT

<213> Achromobacter xylosoxidans subsp. denitrificans

<400> 1

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Gly Cys Gly Pro Ser Arg Asn Tyr Gln Gln Trp Leu Asp Glu Gln Ala
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Ala Gln Gly Tyr Thr Phe Tyr Ala Ser Val Gly Asn Val Ser Asp Trp
      50      55      60
Glu Ser Thr Val Glu Ala Phe Glu Arg Val Lys Arg Asp Met Gly Pro
65      70      75      80
Val Asp Val Leu Val Asn Asn Ala Gly Ile Thr Arg Asp Gly Leu Phe
      85      90      95
Arg Lys Met Ser Ala Asp Asp Trp Arg Ala Val Ile Asp Thr Asn Leu
      100     105     110
Asn Ser Leu Phe Asn Val Thr Lys Gln Val Ile Asp Asp Met Val Glu
      115     120     125
Arg Gln Trp Gly Arg Ile Val Asn Ile Ser Ser Val Asn Gly Gln Lys
      130     135     140
Gly Gln Phe Gly Gln Thr Asn Tyr Ser Thr Ala Lys Ala Gly Ile His
145     150     155     160
Gly Phe Thr Met Ala Leu Ala Gln Glu Val Ala Ser Lys Gly Ile Thr
      165     170     175
Val Asn Thr Val Ser Pro Gly Tyr Ile Gly Thr Asp Met Val Arg Ala
      180     185     190
Ile Arg Pro Asp Val Leu Glu Lys Ile Val Ala Thr Ile Pro Val Arg
      195     200     205
Arg Leu Gly Thr Pro Glu Glu Ile Ala Ser Ile Thr Ser Trp Leu Ala
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<210> 2

<211> 738

<212> DNA

<213> Achromobacter xylosoxidans subsp. denitrificans

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<221> CDS

<222> (1).. (738)

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 Thr Ser Ile Cys Gln Arg Leu Ala Lys Asp Gly Phe Arg Val Val Ala  
 20 25 30  
 ggc tgc ggc ccc agc cgc aat tac cag caa tgg ctg gat gaa cag gcg 144  
 Gly Cys Gly Pro Ser Arg Asn Tyr Gln Gln Trp Leu Asp Glu Gln Ala  
 35 40 45  
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 Glu Ser Thr Val Glu Ala Phe Glu Arg Val Lys Arg Asp Met Gly Pro  
 65 70 75 80  
 gtc gat gtg ctg gtc aac aac gcg ggc atc acc cgc gac ggc ctg ttc 288  
 Val Asp Val Leu 85 Asn Asn Ala Gly Ile Thr Arg Asp Gly Leu Phe  
 90 95  
 cgc aag atg agc gcc gac gac tgg cgc gcg gtc atc gac acc aac ctg 336  
 Arg Lys Met Ser Ala Asp Asp Trp Arg Ala Val Ile Asp Thr Asn Leu  
 100 105 110  
 aac agc ctc ttc aac gtg acc aag cag gtg atc gac gac atg gtc gag 384  
 Asn Ser Leu Phe Asn Val Thr Lys Gln Val Ile Asp Asp Met Val Glu  
 115 120 125  
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 Arg Gln Trp Gly Arg Ile Val Asn Ile Ser Ser Val Asn Gly Gln Lys  
 130 135 140  
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 145 150 155 160  
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 Gly Phe Thr Met Ala Leu Ala Gln Glu Val Ala Ser Lys Gly Ile Thr  
 165 170 175  
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 Val Asn Thr Val Ser Pro Gly Tyr Ile Gly Thr Asp Met Val Arg Ala  
 180 185 190  
 atc cgt ccg gac gtg ctg gaa aag atc gtc gcc acc att ccg gtg cgc 624  
 Ile Arg Pro Asp Val Leu Glu Lys Ile Val Ala Thr Ile Pro Val Arg  
 195 200 205  
 cgc ctg ggc acg ccg gag gaa atc gcg tcc atc acg tgc tgg ctg gcc 672  
 Arg Leu Gly Thr Pro Glu Glu Ile Ala Ser Ile Thr Ser Trp Leu Ala  
 210 215 220  
 tgc gat gag tct ggg ttt tgc acg ggc gcg gac ttc tgc ctc aac ggc 720  
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35                      40                      45  
 Lys Ala Leu Gly Phe Asp Phe Ile Ala Ser Glu Gly Asn Val Ala Asp  
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 Trp Asp Ser Thr Lys Thr Ala Phe Asp Lys Val Lys Ser Glu Val Gly  
 65                      70                      75                      80  
 Glu Val Asp Val Leu Ile Asn Asn Ala Gly Ile Thr Arg Asp Val Val  
 85                      90                      95  
 Phe Arg Lys Met Thr Arg Ala Asp Trp Asp Ala Val Ile Asp Thr Asn  
 100                      105                      110  
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 115                      120                      125  
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 165                      170                      175  
 Thr Val Asn Thr Val Ser Pro Gly Tyr Ile Ala Thr Asp Met Val Lys  
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 Ala Ile Arg Gln Asp Val Leu Asp Lys Ile Val Ala Thr Ile Pro Val  
 195                      200                      205  
 Lys Arg Leu Gly Leu Pro Glu Glu Ile Ala Ser Ile Cys Ala Trp Leu  
 210                      215                      220  
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 20                      25                      30  
 ggt tgc ggc ccc aac tcg ccg cgc cgc gaa aag tgg ctg gag cag cag 144  
 Gly Cys Gly Pro Asn Ser Pro Arg Arg Glu Lys Trp Leu Glu Gln Gln  
 35                      40                      45  
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 Lys Ala Leu Gly Phe Asp Phe Ile Ala Ser Glu Gly Asn Val Ala Asp  
 50                      55                      60  
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 Trp Asp Ser Thr Lys Thr Ala Phe Asp Lys Val Lys Ser Glu Val Gly  
 65                      70                      75                      80  
 gag gtt gat gtg ctg atc aac aac gcc ggt atc acc cgc gac gtg gtg 288  
 Glu Val Asp Val Leu Ile Asn Asn Ala Gly Ile Thr Arg Asp Val Val  
 85                      90                      95  
 ttc cgc aag atg acc cgc gcc gac tgg gat gcg gtg atc gac acc aac 336  
 Phe Arg Lys Met Thr Arg Ala Asp Trp Asp Ala Val Ile Asp Thr Asn  
 100                      105                      110

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| ctg acc tcg ctg ttc aac gtc acc aag cag gtg atc gac ggc atg gcc<br>Leu Thr Ser Leu Phe Asn Val Thr Lys Gln Val Ile Asp Gly Met Ala<br>115 120 125     | 384 |
| gac cgt ggc tgg ggc cgc atc gtc aac atc tcg tcg gtg aac ggg cag<br>Asp Arg Gly Trp Gly Arg Ile Val Asn Ile Ser Ser Val Asn Gly Gln<br>130 135 140     | 432 |
| aag ggc cag ttc ggc cag acc aac tac tcc acc gcc aag gcc ggc ctg<br>Lys Gly Gln Phe Gly Gln Thr Asn Tyr Ser Thr Ala Lys Ala Gly Leu<br>145 150 155 160 | 480 |
| cat ggc ttc acc atg gca ctg gcg cag gaa gtg gcg acc aag ggc gtg<br>His Gly Phe Thr Met Ala Leu Ala Gln Glu Val Ala Thr Lys Gly Val<br>165 170 175     | 528 |
| acc gtc aac acg gtc tct ccg ggc tat atc gcc acc gac atg gtc aag<br>Thr Val Asn Thr Val Ser Pro Gly Tyr Ile Ala Thr Asp Met Val Lys<br>180 185 190     | 576 |
| gcg atc cgc cag gac gtg ctc gac aag atc gtc gcg acg atc ccg gtc<br>Ala Ile Arg Gln Asp Val Leu Asp Lys Ile Val Ala Thr Ile Pro Val<br>195 200 205     | 624 |
| aag cgc ctg ggc ctg ccg gaa gag atc gcc tcg atc tgc gcc tgg ttg<br>Lys Arg Leu Gly Leu Pro Glu Glu Ile Ala Ser Ile Cys Ala Trp Leu<br>210 215 220     | 672 |
| tcg tcg gag gag tcc ggt ttc tcg acc ggc gcc gac ttc tcg ctc aac<br>Ser Ser Glu Glu Ser Gly Phe Ser Thr Gly Ala Asp Phe Ser Leu Asn<br>225 230 235 240 | 720 |
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19

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<210> 8  
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<400> 9  
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<213> *Achromobacter xylosoxidans* subsp. *denitrificans*

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| ctttcgcgtg            | gtggcaggct           | gcggccccag  | ccgcaattac | 180 |
| cagcaatggc            | tggatgaaca           | ggcggcgccag | ggctatacgt | 240 |
| tctacgcgtc            | agtgggcaac           | gtgtccgatt  | gggagtcac  | 300 |
| ggtagaagca            | ttcgagcgcg           | tcaagcggga  | catgggcccc | 360 |
| gtcgtatgtc            | tggatcaaca           | gcggggcatc  | acccgcgacg | 420 |
| gcctgttccg            | caagatgagc           | gccgacgact  | ggcgcgcggt | 480 |
| catcgacacc            | aacctgaaca           | gcctcttcaa  | cgtagccaag | 540 |
| caggatgatc            | acgacatggt           | cgagcgccag  | tggggccgca | 600 |
| tcgtcaacat            | cagctcggtg           | aacgggcaga  | aggggcagtt | 660 |
| cggccagacg            | aactattcca           | cggcgaaggc  | gggcatccat | 720 |
| ggcttcacca            | tggcgtggc            | gcaggaagtg  | gccagcaagg | 780 |
| gcatcacggt            | caacacggtg           | tcgccgggct  | acatcggcac | 840 |
| ggacatgggt            | cgcgccatcc           | gtccggacgt  | gttggaag   | 900 |
| atcgtcgcca            | ccattccggt           | gcgccgcctg  | ggcacgccgg |     |
| aggaaatcgc            | gtccatcacg           | tcgtggctgg  | cctcggatga |     |
| gtctgggttt            | tcgacgggcg           | cggacttctc  | gtcaacggc  |     |
| ggcctgcata            | tgggctgaag           | catcgccggc  | cgccacgagc |     |
| ggccccccgg            | cgccggcgcg           | cctcggggag  | agggccgtcc |     |
| ggcattacac            | ttacccttat           | ccgaagtctt  | agagatcgcc |     |
| cgatccgggg            | acaacatga            |             |            |     |